SUMMARY OF ERT TESTIMONY ON OTHER SOURCES OF CONTAMINATION TO THE DRIFT-PLATTEVILLE AND OTHER AQUIFERS IN THE ST. LOUIS PARK AREA*

Environmental Research & Technology, Inc.

December 4, 1984

Introduction

In our April 1983 report (Recommended Plan for a Comprehensive Solution of the Polynuclear Aromatic Hydrocarbon Contamination Problem in the St. Louis Park Area), ERT stated that the Drift-Platteville aquifer is likely contaminated by various other sources of PAH and phenolics, and by other sources of other contaminants (text pp. 11a, 15a, 55a, 218, App. B pp. B-15, B-16). ERT will offer testimony describing other types of contamination seen in the Drift-Platteville aquifer, potential sources of these and other contaminants, and potential sources of PAH and phenolic contaminants other than the former Reilly plant. The basis for this testimony is provided by 1) measurements of Drift-Platteville samples made by Reilly and its contractors, 2) measurements of Drift-Platteville samples made by the plaintifs and their contractors, 3) publicly available information on various activities in the vicinity of the site, and 4) general scientific literature.

Other PAH Sources in the Site Area

As stated in Appendix B (p. B-15) of ERT's April 1983 report, PAH and phenolics in the SLP area can result from a number of sources, both natural and man-made. These sources include, but are not limited to:

- peat deposits,
- storm water runoff,
- asphalt manufacture and use,
- used crankcase oil,
- fuel oil and other petroleum distillates,
- manufacture of natural and synthetic rubber,
- incinerators, fires and open burning.

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*The Definitions of Terms used in ERT's April 1983 report apply here, unless otherwise noted.

Each of these potential sources is described briefly below.

Peat Deposits

As described in Appendix B of the April 1983 report, the former Reilly plant site and adjacent bog are underlain by extensive peat deposits. Peat is a highly organic material that contains natural levels of PAH. A peat sample collected near the Westwood Townhouses in SLP, showed 2.2% benzene extractables and 7.9 ppm fluoranthene (Serco, 1978). A peat sample from the Carlos Avery Wildlife Management Sanctuary, about 30 miles north of the Twin Cities, analyzed by TCT showed 2.9% benzene extractables and 1.1 ppm phenolics (TCT, 1983). A water sample from a peat bog near Floodwood, MN collected and analyzed by TCT showed 2.8 ug/l total PAH, including 2.2 ug/l BaP (TCT, 1981).

Stormwater Runoff

Various researchers have characterized the quality of stormwater runoff in urban areas. PAH compounds are typically found to be prevalent in such waters. Hoffman, et al. (1984) found total PAH concentrations (flow-weighted means) ranging from about 1 ug/l to well over 10 ug/l in stormwater. Concentrations varied for different land use patterns in the areas drained, with highway and industrial land uses yielding the highest loadings. MacKenzie and Hunter (1979) reported about 50 ng/l of dibenzothiophene in Philadephia stormwater runoff, and also found it in used crankcase oil. CH2M Hill reported about 2 ug/l of PAH in five stormwater samples collected in St. Louis Park and surrounding communities (CH2M Hill, 1983). A national survey of urban stormwater runoff quality by the U.S. EPA has also found widespread PAH contamination (Cole, et al. 1984).

Asphalt Manufacture and Use

Petroleum asphalt is the essentially uncracked residue from the fractional distillation of crude oil. Most of the asphalt used in the U.S. (78%) is used for paving, with 17% used for roofing and 5% for other applications (Trosset et al. 1978). It is estimated that 94% of the paved surfaces in the U.S. are treated with some form of asphalt.

Since asphalt contains signficant amounts of PAH (see Table 1), the emplacement and wear of these pavements may represent a significant source of PAH to the environment. With respect to point sources of asphalt, there are (were) a number of asphalt batching plants and roofing materials facilities in the St. Louis Park area (see Table 2).

Used Crankcase Oil

Of the PAH generated by automobile engines, 85% is retained in the crankcase oil while 15% is emitted to the atomosphere via exhaust (Peake and Parker 1980). Estimates for the year 1976 suggest that 500 million gallons of used crankcase oil were discharged to the environment, most poured onto land or into sewers (Peake and Parker 1980). Assuming that the citizens of St. Louis Park (approximately 44,000) were doing their share, that community would be faced with 100,000 gallons of improperly disposed crankcase oil. Unused oil contains in the vicinity of 26 micrograms/liter benzo(a)pyrene, which increases during long-term use to some 5800 micrograms/liter (Graf and Winter 1968 cited in Bingham et al. 1979). Analysis of urban stormwater runoff in Philadephia led to the conclusion that used crankcase oil represented the most likely source of aromatic compounds encountered. These oils were characterized by relatively high concentrations of naphthalenes and benzothiophenes (MacKenzie and Hunter 1979). Table 1 presents concentrations of selected PAH in used crankcase oil.

Fuel Oil and Other Petroleum Distillates

Crude oil varies in its total PAH content, having a mean total PAH of 2.8%; mean benzo(a)pyrene is 1.46 ppm (Neff 1979). Petroleum products derived from the distillation and cracking of crude oil have been shown to have widely varying amounts of PAH, some of which is generated during the refining process. PAH compounds tend to be more concentrated in the heavier oils (e.g., Bunker C fuel oil) and asphalts than in the lighter products such as number 2 fuel oil (see Table 1). There are a number of sites near the Reilly site where fuel oil and other petroleum distillates were and are now stored (see Table 3) or where spills of such materials have been reported (Table 4).

Manufacture of Natural and Synthetic Rubbers and Tires

Aromatic oils are used as processing oils and extenders; these oils are added in amounts of up to 50 parts per 100 parts of rubber (Bingham et al. 1979). Presumably these aromatic oils are comparable in PAH content to those mentioned below as feedstocks manufacturing for carbon black (i.e. up to 5% by weight PAH). The following rubber products operations have been identified in the St. Louis Park area:

- Minnesota Rubber & Gasket Co. 3630 Wooddale Ave. SLP
- Houghton-Vix-Syn Co. 130 Washington Ave. (?) HOP
- Northwest Rubber Products (no address available) HOP
- Finney Co., Inc. 3350 Gorham Ave. SLP
- Robinson Rubber Products Co. 3629 Hampshire Ave. SLP
- Minnesota Silicone Rubber Co. 5724 W. 36th St. SLP
- Product Engineering & Development Co. 9 N. Tyler Ave. HOP
- Rubber Products Co. 129 Washington Ave. S. HOP

Carbon black is produced by the partial combustion of oil or natural gas, oil being the more common feedstock. In many cases, highly aromatic oils such as decant oil are used as a feedstock; these oils contain up to 5% by weight of 4- to 6-ring PAH (Bingham et al. 1979). The resultant carbon black is also enriched in PAH. Carbon black is primarily used in tires, and the gradual wear of tires releases PAH to the environment (USEPA 1978).

Incinerators, Fires and Open Burning

PAH compounds are formed by the incomplete combustion of municipal refuse. PAH compounds, including benzo(a)pyrene, were detected in the flue gases of every incinerator sampled during a U.S. Public Health Service survey (USEPA 1978). The greatest emission of PAH is in the solid residues, which generally contain greater amounts by an order of magnitude than are contained in the air or water effluent streams (Davies et al. 1976). In general, large incinerators emit less PAH per mass of refuse fired than do smaller incinerators (USEPA 1978). Table 1 presents concentrations of selected PAH constituents in ash from municipal incinerators.

St. Louis Park operated an incinerator for municipal refuse from 1954 to 1968. A report by the SLP Director of Public Works indicated that the capacity of this incinerator was 50 tons per 8 hours, and in 1960 the incinerator burned 10,800 tons of refuse (Folland, 1963). Also, the report indicates that between 1959 and 1962 SLP dumped approximately 22,400 cubic yards of incinerator ash (2.5 acres, 6 feet deep) at the Bass Lake dump site (Table 5). The report notes that during about the first eight or nine years of operation, large amounts of grass clippings were put into the incinerator "causing incomplete combustion of the garbage and this created a serious problem at the ash dump site" (Folland, 1963).

During open burning of refuse, a once common practice in St. Louis Park, PAH compounds are generated due to the incomplete nature of combustion. Air emissions of benzo(a)pyrene are estimated at 340 micrograms/kg refuse burned (USEPA 1978). Here, as with ash from municipal incineration, the solid residue may contain significant quantities of PAH which may leach out of ash disposal areas. A number of present or former refuse burning areas have been identified in St. Louis Park (see Table 5).

Another possible PAH source in the St. Louis Park area were peat bog fires that are commonly known to have occurred occassionally around the city. The fires were often described as producing thick black smoke and it is likely that incomplete combustion of buried and/or water-saturated peat layers resulted in the formation of PAH (Renner, 1983).

Other Contamination Sources in the Site Area

There are a number of other potential sources of contaminants other than PAH to the Drift-Platteville aquifer in the immediate vicinity of the former Reilly site. Various sites that have been mentioned in available documentation include:

- National Lead/Taracorp/Golden Auto Parts - A Superfund site near the former Reilly site (3645 Hampshire Ave.) where lead and other heavy metals contaminants are of concern (Hult, 1980).

- Androc Chemical Co. - A fire at this facility (7301 Lake St.) on December 30, 1974 may have introduced pentachlorophenol and other contaminants to the Drift and other aquifers (Hult, 1980).

- Nitrate contamination - Individual sewage disposal systems in the St. Louis Park area prior to the 1960's led to widespread contamination of the Drift aquifer by nitrates and surfactants (Woodward, 1961). Some evidence of elevated nitrate levels still remain in the site area (Hult and Schoenburg, 1981).

- Prest-o-lite acetylene plant - This facility operated near the Reilly site (just east of Taracorp) from about 1914 into the 1920's, apparently using the calcium carbide process. Large ponds where lime sludges were apparently disposed are evident in historic aerial photos of the area.

- Culligan plant - This facility operated near the Reilly site (Highway 7 and Brunswick) from about 1944 to 1951, apparently for recharging water softeners. It has been reported that wastewaters high in various salts were disposed at the site.

- RCRA facilities - There is a large number of facilities near the Reilly site that have notified as RCRA facilities, mainly as generators, but some as transporters or treatment/storage/disposal facilities. These sites are listed in Table 6.

Significance of Other Sources

It is not possible, in most instances, for the other potential sources of PAH and other contaminants described above, to document quantitatively the impacts that they have had individually on the Drift-Platteville aquifer. In some cases, field measurements that can be related to these sites are available, or rough estimates of their contributions can be calculated. ERT does not contend that all of the above-named sources (including those listed in Tables 2 through 6) have contributed significantly to Drift-Platteville contamination in the site area. Instead, many of these sources are listed and described to give a qualitative sense of the wide variety of potential contamination sources in a developed urban/light industrial area such as that surrounding the former Reilly site.

Measured Contamination

In addition to literature-based potential sources of contamination, there is a fairly extensive database of measured contamination in the Drift-Platteville from sources other than the Reilly site. These data are described briefly below. Details on sampling and analysis methodologies are available in the references cited.

TCT has analyzed various Drift-Platteville wells for volatile organic compounds (TCT, 1983). This work showed significant contamination of wells W101 (Platteville) and W117 (Drift) by 1,2-dichloroethylene and trichloroethylene. Concentrations were in the range of 100 ug/l or more for both compounds in each well. In fact, the trichloroethylene levels significantly exceeded the U.S. EPA 10^{-5} risk level water quality criterion of 27 ug/l (U.S. EPA, 1980a) in these wells. Traces of chlorinated solvents were also found in other wells, including at least one Prairie du Chien-Jordan well (W40-Minnesota Rubber - at roughly 10 ug/l levels).

Various Drift-Platteville and deeper wells were analyzed by ETC for a variety of metals (ETC, 1983). These results show that accepted water quality criteria are exceeded for a variety of metals in various wells. All wells tested (W27, W29, W32, W38, W65, W101, W112, 2900 Lavelle and Northland Aluminum Carpentry Shop) exceeded the aesthetic based criteria (U.S. EPA 1976) for iron (0.3 mg/l) and manganese (0.05 mg/l). Well W27, a Platteville well, exceeded the health-based criteria for cadmium (0.01 mg/l) and nickel (0.013 mg/l) (U.S. EPA 1976, 1980b, 1980c). Some deep well samples also exceeded applicable criteria, including W38 (Ironton-Galesville) for nickel and W32 (Prairie du Chien-Jordan) for silver.

GCMS analyses by MRC of a variety of Drift-Platteville wells have shown evidence of petroleum contamination (MRC, 1983). These wells include W12, W27, W101, and W117. Well W27, the Terry Excavating well, has been reported elsewhere to have been contaminated by a gasoline spill (Hult, 1980). Various well samples analyzed by MRC also showed evidence of contamination by elemental sulfur, which may be related to the spill reported at Merit Gage in 1978 (see Table 4).

TCT has also analyzed various wells for chloride, nitrate, sodium and sulfate as general indicators of inorganic contamination (TCT, 1983). Their results showed elevated levels of sulfate and chloride at wells W124 and W126, far to the east of the former Reilly site. Former dumps in this area (see Table 5) are a likely source of these elevated levels, which may indicate additional contaminants in the area. Elevated sodium and chloride levels in wells W101 and W117 may reflect the effects of Culligan's salt disposal operations nearby.

Conclusion

Based on the information summarized here, and documented in detail in the references cited, we believe it is clear that the Drift-Platteville aquifer has been contaminated, sometimes to a significant degree when compared to applicable criteria, by a variety of sources other than the Reilly site, both by PAH and by other contaminants not related to coal tar or creosote operations. It

should also be noted that contaminants in the Drift-Platteville can affect underlying aquifers (e.g., St. Peter, Prairie du Chien-Jordan) by inter-aquifer flow via leaking multi-aquifer wells, buried bedrock valleys and/or leakage through confining beds.

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TABLE 1

CONCENTRATION OF SELECTED PAH COMPOUNDS IN VARIOUS MATERIALS
(reported as ppm)

COMPOUND	Wallcave et al. 1971 ASPHALTS	Mabiyandi et al. 1982 PAVING ASPHALT	Mabiyandi et al. 1982 ROOFING ASPHALT	Anderson et al. 1974; Pancirov & Brown 1975 CRUDE OIL	Anderson et al. 1974; Pancirov & Brown 1975 NO. 2 FUEL	Anderson et al. 1974; Pancirov & Brown 1975 BUNKER C	Peake & Parker 1980 USED CRANK OIL	Davies et al. 1976 MUNIC. INCIN. ASH	Eiceman et al. 1981 MUNIC. INCIN. ASH
Acenaphthene									ND-0.028
Anthracene							0.33		0.004-0.380
Benzo(a)anthracene	0.15-35	79.8-101	107-382	1.7-2.3	1.2	90	0.87	0.171	
Benzo(k)fluoranthene		1.72-1.98	0.29-6.14	1- 1.3			1.44	0.292**	ND-0.023
Benzo(ghi)perylene	0.6-15	0.87-1.59	4.23-5.49	1.6			1.67	0.047	
Benzo(a)pyrene	0.1-27	1.24-1.28	1.80-8.06	0.75-2.8	0.6	44	0.36	0.147*	ND-0.014*
Benzo(e)pyrene	0.03-52			0.5-2.5	0.1	10	1.74	see B(a) Pyrene	see B(a) pyrene
Biphenyl									0.002-0.350
Chrysene	0.04-34	75.0-84.5	45.0-384	6.9-17.56	2.2	196	2.48*	see B(a) Anth.	
Coronene	0.2-2.8							0.020	
Fluoranthene		2.58-3.54	5.16-13.1	2.9-5.0	37	240	4.36	0.058	0.0005-.440
Fluorene				100-200	3,600	2,400	1.47		0.0005-.064
7,12-dimethyl benze(a) anthracene		3.88-4.75	0.71-10.8						
1-methyl naphthalene				500-800	8,200	2,800			
2-methyl naphthalene				700-900	18,900	4,700			
Naphthalene				400	4,000	1,000			
Perylene	0.1-39	1.32-1.67	2.26-10.4	0.1-34.8		22	0.13	0.82	
Phenanthrene	0.4-35			26-70	429	482	7.80		
Pyrene	0.08-38	8.97-10.3	5.49-31.6	3.5-4.5	41	23	6.69	0.049	0.0005-.120
Triphenylene	0.25-7.6			2.8-10	1.4	31	see Chyrsene		
# of compounds reported	10	11	11	22	17	17	46	13	8
# of samples analyzed	8	2	3	2	1	1	1	1	8
Analtytical method	Not Known	HPLC	HPLC	Not Known	Not Known	Not Known	GC/MS	GC	Not Known

*chrysene & triphenylene

*also includes B[e]P
**also includes B[b]F, B[j]F includes chrysene

*also includes B[e]P

TABLE 2

ST. LOUIS PARK ASPHALT BATCHING AND ROOFING MATERIAL FACILITIES*

Black Top Service Company

Bury & Carlson, Inc.

Goldseal Asphalt Roofing Company

Hendrickson Roof Company

Glen Johnson Contracting Company

J & N Blacktopping, Seal Coating and Repair

J.V. Gleason Company

Plehal Blacktopping

Charles Turnbow Roofing Company

Willie's Seal Coat

*Source: St. Louis Park City Directories.

TABLE 3

ST. LOUIS PARK FUEL OIL DEALERS*

Flower City Coal and Oil Company
Foye Fuel and Paint Company
Gage Reeves Fuel Company
Hennessy J. E. and Company
Johnson Alb. Coal Company
Johnson Roberts Oil Company
Justus Lumber and Fuel Company
Kinney Fuel Company
Lambert Yards, Inc.
Midwest Oil Company
Minnesota Oil and Refining Company
Northfield L.W. Company
Pochrandt Lumber and Fuel Company
Rendall Coal and Oil Company
Sierup Fuel and Construction Company
Sorenson Gas and Oil Company
Uniform Petroleum Products
West Minneapolis Fuel and Ice Company
Young Fuel Company

*Source: St. Louis Park City Directories

Table 4

SPILLS IN SLP/HOPKINS AREA

Map #	Date of Spill	Substance and Amount	Location	Responsible Party	Direction/Distance from W23	Remarks
1	4/25/74	No. 2 Fuel Oil, amount unknown	Excelsior Blvd. and Interlachen, HOP (based on phone book)	National Supermarkets	1.1 miles SSW	Leaky fuel line was subsequently repaired; oil saturated soil around underground storage tank replaced with clean fill.
2	6/23/76	Thiram (tetramethyl thiuram disulfide); amount unknown.	5415 Opportunity Ct. (based on phone book)	Glynco Plastics	2.8 miles SW	Actually in Minnetonka near Hopkins line.
3	11/25/??	Fuel oil; 300 gallons	8700 W. 36th St. SLP (based on phone book)	McCoy Oil Company	0.9 miles WSW/W	
4	"ongoing"; reported 1976	"oil" thought to be attributable to "natural material"; unknown amount.	301 Monroe Ave. N. HOP	?-?-?-?-?-?-?-?-?	1.4 miles SW	Affected private well.
5	4/7/77	Gasoline; 10 gallons.	6701 W. 23rd St. SLP	Consodel	1.4 miles NNW/N	
6	5/11/77	"pesticides"; 25 gallons.	5705 W 35th St. SLP (based on phone book)	Burdick Elevator	1.1 miles ESE/E	
7	2/8/78	Gasoline; 15 gallons.	4517 Minnetonka Blvd. SLP	Private Automobile	1.8 miles ENE	
8	6/17/78	"motor oil"; 150 gallons.	3565 Wooddale Ave. SLP	D-A Lubricants	0.8 miles ESE/E	W38 is in D-A lubricants building; W101 and W112 close by.
9	7/26/78	"diesel"; 15-20 gallons.	Hopkins (probably Shady Oak Store at Shady Oak Road and County Rd. 3.)	Red Owl (Supremarket Chain)	3.0 mile SW	
10	8/30/78	"resin"; 200 (lbs.??)	6725 Oxford Street SLP (based on phone book).	Construction Materials, Inc.	0.6 miles SE	
11	"continuous"; reported in 1978.	"sulfur liquid waste; unknown quantity	3954 Meadowbrook Rd. SLP (based on phone book).	Merit Gage	0.7 miles SSW/S	
12	"continuous"; reported in 1979.	"oils"; unknown quantity.	3565 Wooddale Ave. SLP	D-A Lubricants	0.8 miles ESE/E	see note for map #8

Table 4

SPILLS IN SLP/HOPKINS AREA (Continued)

Map #	Date of Spill	Substance and Amount	Location	Responsible Party	Direction/Distance from W25	Remarks
13	12/30/74	pentachlorophenol, other; unknown quantity	7301 W. Lake St. SLP	Andrec Chemical	0.5 mile S	Explosion and fire.
14	3/9/78	diesel fuel; 5000 gallons.	11421 W 47th St. Minnetonka (near Hopkins line). (based on phone book).	GL Contracting	3.1 miles SW	
---	5/24/73	"oil"; amount unknown	SLP	?-?-?-?-?-?-?-?-?		
---	1/11/77	No. 2 fuel oil; 5 gallons.	SLP	Stearns Oil		
---	1971 (reported in 1977)	Copper sulfate; unknown quantity.	SLP	?-?-?-?-?-?-?-?-?		
---	7/4/77 (reported 9/12/77)	"gas" (presumably gasoline); 2600 gallons.	SLP	?-?-?-?-?-?-?-?-?		
---	2/4/78	gasoline; 10 gallons.	SLP	Private automobile		
---	6/28/78	phthalic anhydride; unknown quantity	SLP	?-?-?-?-?-?-?-?-?		
---	3/22/79	"waste oil"; 20+ gallons.	SLP	Jensen Truck Leasing		
---	3/26/79	Diesel fuel; up to 75 gallons.	SLP	?-?-?-?-?-?-?-?-?		
---	6/25/79	"herbicide"; unknown quantity.	SLP	Minneapolis Northfield [& Southern] Railroad.		MN&SRR runs N-S through SLP, passes near site.
---	11/23/74	diesel fuel; 30-40 gallons.	SLP	Shell Oil Company		Tanker jack-knifed; address illegible on our copy of spill account.
---	12/13/74	gasoline; unknown amount	HOP	Clark Oil Co.		Tank overfilled; gasoline flushed to storm sewer.
---	1/4/75	gasoline; 70 gallons.	SLP	Standard Oil		Tank overfilled.
---	8/17/78	asphalt; 24 tons	"Plymouth-Minnetonka"	?-?-?-?-?-?-?-?-?		included on this list for asphalt-PAH interest.

TABLE 5

REFUSE BURNING AND INCINERATOR ASH DUMPING AREAS
IN ST. LOUIS PARK

Jacobson Dump, also called "The Belt Line burning dump"
Excelsior Blvd. and Highway 100.

Bass Lake site, also called "The tin can dump"
North of West 36th Street between Natchez and Princeton Avenues

Landers-Norbloom-Christianson Site 1
West 28th Street and Louisiana Avenue

Babe Ruth Field Site
South of West 36th Street between Princeton and Quentin Avenues

Landers-Norbloom-Christianson Site 2
Minnetonka Blvd. and Texas Avenue

Skippy Field
Near SLP City Hall

Table 6 RCRA Facilities in St. Louis Park/Hopkins

Map #	Facility Name and Address	Notified as	Facility Description/Remarks
1	Broughton Print Inc. 3302 Gorham Ave. SLP	GEN	SIC 27 52 Commercial Printing , lithographic. Dun & Bradstreet and 1981 White Pages list address as 14550 28th Ave. MPLS or Plymouth. Thomas Register (which lists Plymouth address) notes that they make business forms, decals.$1 million+ in tangible assets.
2	Color-Ad Packaging Inc. 3600 Alabama Ave. SLP	GEN	SIC 26 43 Bags,, except textile bags. In Yellow Pages under "Bags-Plastic". Thomas Register lists polyethylene bags. $1million+ in tangible assets.
3	Flame Industries Inc. 7317 W. Lake St. SLP	GEN	SIC 33 98 Metal Heat Treatment. See Yellow Pages ad. Flame has other facilities in MN, MI, TX. Wastes Listed: F001 (spent halogenated chlorides and sludge from gray iron foundries);F002 (spent halogenated solvents and still bottoms); F010 (quench oil bath sludge from metal heat treating); F011 (salt bath pot cleaning solution from heat treating); F012 (wastewater treatment sludge from heat treating); F014 (wastewater treatment tailing pond sediment from min. metal rec. operations); F015 (spent cyanide bath solution); P030 (cyanides); and P076 (nitric oxide).
4	Hardcoat Inc. 6319 Cambridge St. SLP	GEN	SIC 34 71 Electroplating, plating, polishing, anodizing and coloring. Listed in Yellow pages under Metal Finishers.
5	Lindberg Corp. (Lindberg Heat Treating) 6981 Oxford St. SLP	GEN	SIC 33 98 Metal Heat Treating. Lindberg has numerous other plants throughout U.S. See Yellow Pages ad.
6	Lowell Inc. 6751 Oxford St. SLP	GEN	SIC 35 99 Machinery except electrical not elsewhere specified. Listed in Yellow Pages under Machine Shops. $1 million+ in tangible assets.
7	Minnesota Rubber Co. 3630 Wooddale Ave SLP	GEN	SIC 30x69 Fabricated rubber products not elsewhere specified, other products. Molded rubber, plastic and silicone parts, injection molded thermoplastics. $25 million+ in tangible assets. See Yellow Pages ad.
8	Northland Aluminum Products 5005 Hwy 7 at Hwy 100 SLP	GEN	SIC 33x61 Aluminum foundries (castings) and other products. Dun & Bradstreet lists aluminum cookware. $1 million+ in tangible assets. See Yellow Pages ad. Wastes Listed: F017 (paint residues from industrial painting).

Table 6 (continued)

Map #	Facility Name and Address	Notified as	Facility Description/Remarks
9	Taracorp Industries 3645 Hampshire Ave. SLP	TSDF	33 41 Secondary smelting and refining of non-ferrous metals. Taracorp purchased a portion of the property at this address formerly owned by National Lead (NL) Industries. The facility consisted of a lead smelter and disposal areas for lead slag. See attached one-page description of National Lead-Taracorp Superfund site. Also see Yellow Pages ad for NL Industries, Inc.
10	S K Products 3520 Xenwood Ave. SLP	GEN	Listed under "metallizing" and "plating" in Yellow Pages (see ad).
11	Electro-Craft Corporation 1602 2nd St. S. HOP	TRANS	SIC 36x21 Motors and generators. Dun & Bradstreet lists as manufacturer of servo motors. Thomas Register lists DC servo motors, controls for computer peripheral equipment and automation systems. Wastes Listed: F001 (spent halogenated chlorides & sludge from gray iron foundries); F001 (non-halogenated solvents and solvent recovery still bottoms); U159 (methyl ethyl ketone) and U226 (1,1,1-trichloroethane).
12	Habco Inc. 1418 5th St. S. HOP	TSDF TRANS	SIC 51 91 Farm supplies; also 28 79 Pesticides and agricultural chemicals not elsewhere specified. Yellow Pages ad (see attched) notes "chemicals for weed control-railroads, utilities and industrial" (address listed as 10501 Wayzata Blvd. HOP).
13	Precious Metal Platers Inc. 149 N. Jackson Ave. HOP	GEN TSDF	SIC 34 71 Electroplating, plating, polishing, anodizing and coloring.
14	Spicer Heavy Axle Div. (Dana Corporation) 1600 2nd St. S. HOP	GEN	SIC 37 14 Motor vehicle parts and accessories.
--	Clow Stamping Co. Inc. 3947 Meadowbrook Rd. SLP (located near facility #5 on map)	GEN	Yellow Pages ad (see attached) notes "complete metal fabricating".
--	Control Data Corp. Printed Circuit Division 3965 Meadowbrook Rd. SLP (located near facility #5 on map)	GEN	Not listed at this address in corporate directories.
--	Oak Knoll Animal Hospital 7010 Hwy 7 SLP	GEN	SIC 07 42 Veterinary services for animal specialties.